

CLAIMS:

1. Device for making a master record carrier (60) for use in making a stamper (64) for making replicated read-only optical record carriers (90), comprising:

- a recording head (1) for recording information in an information layer (62) of a master record carrier (60), said recording head (1) including a heatable tip (2) which can be displaced in at least one direction,

- a displacement means (3, 5, 6, 9) for displacing said tip (2) in the at least one direction,

- a heating means (7) for heating said tip (2) and

- a control unit (8) for controlling said heating means and said displacement means such that for recording a mark said tip is heated and displaced to be in contact with said information layer causing an indentation therein.

2. Device as claimed in claim 1,

wherein said heating means comprises a current source (7) for providing an electric current for flowing through said tip (2) when a mark shall be recorded.

3. Device as claimed in claim 1,

wherein said recording head (1) further comprises a light deflection means (4) and wherein said displacement means comprises a light generation unit (3) for providing a light beam (L), in particular a laser beam, to be directed onto said deflection means (4) and a light detection unit (6) for detection of light deflected by said deflection means (4).

4. Device as claimed in claim 1,

wherein said displacement means comprises an actuator (5, 9), in particular a piezo-electric actuator or a thermo-mechanical cantilever, which is included in said recording head (1), for causing the displacement of said tip (2) under control of said control unit (8).

5. Device as claimed in claim 1,

wherein said tip (2) has a conical shape, the top of said conical tip (2) facing said information layer (62).

6. Device as claimed in claim 1,

5 wherein said tip (2) comprises a metal wire, in particular made of platinum or tungsten.

7. Device as claimed in claim 6,

wherein said metal wire is covered by a tube, in particular a Wollaston tube.

10 8. Device as claimed in claim 1,

wherein said control unit (8) comprises a Wheatstone bridge, said tip (2) being electrically one bridge element thereof.

9. Device as claimed in claim 1,

15 comprising an array of recording heads (1) each comprising a heatable tip (2), which can be independently heated and displaced under control of said control unit (8).

10. Method of making a master record carrier (60) for use in making a stamper

(64) for making replicated read-only optical record carriers (90), comprising the step of

20 recording information in an information layer (62) of a master record carrier (60), wherein a mark is recorded by the steps of heating the tip (2) and displacing the tip (2) to be in contact with said information layer (62) causing an indentation therein.

11. Method as claimed in claim 10,

25 wherein said method is used, for simultaneously recording more than one information, in particular for simultaneously recording more than one subsequent channel bits of a 1D channel code, more than one channel bits of parallel tracks of a 1D channel code or more than one channel bits of parallel bit rows of 2D channel code.

30 12. Device for making a stamper (64) for making replicated read-only optical record carriers (90), comprising:

- a device for making a master record carrier (60) as claimed in claim 1,

- means for depositing a metallic layer (64) on top of said information layer (62), and

- means for separating said deposited metallic layer (64) from said information layer (62) to obtain said metallic layer (64) forming said stamper.

13. Device as claimed in claim 12,

5 wherein said master record carrier (80) comprises an additional photo-sensitive layer (66) between said information layer (62) and a substrate layer (61), further comprising:

a light source illuminating the information layer (62), after the information has been recorded therein, to cause a photo-chemical reaction in said photo-sensitive layer (66)

10 and

- means for developing said photo-sensitive layer (66) before a metallic layer (64) is deposited on top of the information layer (62).

14. Device as claimed in claim 13,

15 wherein said light source is an UV source for illuminating said information layer (62) by UV radiation.

15. Method of making a stamper (64) for making replicated read-only optical record carriers (90), comprising the steps of :

20 - making a master record carrier (60) by a method as claimed in claim 10,
- depositing a metallic layer (64) on top of said information layer (62), and
- separating said deposited metallic layer (64) from said information layer (62)
to obtain said metallic layer (64) forming said stamper.

25 16. Record carrier for use as master record carrier (70) by a device as claimed in claim 1, comprising:

- a substrate layer (61),
- an information layer (62), and
- an interface layer (65), in particular a metallic interface layer (65), between
30 said substrate layer (61) and said information layer (62) for control of the heat diffusion through said information layer (62).

17. Record carrier for use as master record carrier (80) by a device as claimed in claim 13, comprising:

- a substrate layer (61),
- an information layer (62), and
- a photo-sensitive layer (66) between said substrate layer (61) and said information layer (62).

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18. Record carrier as claimed in claim 17,
further comprising a metallic interface layer between said photo-sensitive layer (66) and said information layer (62) for control of the heat diffusion through said information layer (62).

10 19. Record carrier as claimed in claim 16 or 17,

wherein said information layer (62) is substantially made of an organic material.